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| | **Notice of Allowability** | Application No. | Applicant(s) |
|---|---|---|---|
| | | 10/086,839 | YAKHINI ET AL. |
| | | Examiner | Art Unit |
| | | Edward Raymond | 2857 |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--*

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *Amendment 7/14/05*.

2. ☒ The allowed claim(s) is/are *1-12*.

3. ☒ The drawings filed on *28 February 2002* are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All    b) ☐ Some*    c) ☐ None  of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of

    Paper No./Mail Date _____ .

    **Identifying indicia** such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

## DETAILED ACTION

## EXAMINER'S AMENDMENT

1.      An examiner's amendment to the record appears below. Should the changes
and/or additions be unacceptable to applicant, an amendment may be filed as provided
by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be
submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview
with Alan W. Cannon on July 21, 2005.

2.      The application has been amended as follows:

Replace **claim 1** with the following text:

"1. (Original) A method for extracting data from a scanned image of an array
composed of pixels having one or more associated intensity values, the method
comprising: computing row and column vectors by horizontal and vertical projection of
pixel intensity values; computing comer-feature-image from the row vectors across rows
of pixels and column vectors across columns of pixels from the horizontal and vertical
pixel-value projections, respectively; constructing a feature coordinate system using the
computed comer-feature-image positions to index feature images in the scanned image
of the array; and using the coordinate system to index and extract data from feature
images within the scanned image of the array."

Replace **claim 4** with the following text:

4. (Original) A method for extracting data from a scanned image of an array
composed of pixels having one or more associated intensity values, the method

comprising: indexing images of features within the scanned image of the array by

constructing and refining a feature coordinate system by linear regression analysis to

align features of the array with the index of the grid; for each indexed feature image,

selecting a set of pixels within the feature image from which to compute one or more

feature intensity signals; and extracting data from the selected set of pixels for each

feature image within the scanned image of the array.

### *Allowable Subject Matter*

3.      **Claims 1-12** are allowed.

4.      The following is an examiner's statement of reasons for allowance: Zuzan et al.

teach an image analysis of high-density synthetic DNA microarrays.  The prior art of

record does not teach a method for extracting data from a scanned image of an array

comprising the step of computing corner-feature-image positions from the row vectors

across rows of pixels and column vectors across columns of pixels.

The prior art of record does not teach the step of constructing an initial

coordinate system comprises computing corner-feature image positions and estimating

positions of the features other than the corner features based on the computed corner-

feature positions and known inter-feature spacings.

The prior art of record does not teach the step of indexing images of features

within the scanned image of the array by constructing an initial feature coordinate

system and rotating the feature coordinate system over a range of rotational angles in

order to precisely align the feature coordinate system with feature images within the

scanned image of the array; and extracting data from indexed feature images in order to identify strong features with relatively large signal-to-noise ratios.

The prior art of record does not teach a method for indexing images of features within the scanned image of the array by constructing and refining a feature coordinate system by linear regression analysis to align features of the array with the index of the grid.

The prior art of record does not teach a step of extracting two or more background-subtracted and normalized feature signal intensities from the selected set of pixels for each feature image within the scanned image of the array.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### *Contact Information*

5.      Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward Raymond whose telephone number is 571-272-2221. The examiner can normally be reached on Monday through alternating Friday between 8:00 AM and 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on 571-272-2216. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-2221 for regular communications and 571-272-1562 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is 703-308-

1782.

July 24, 2005
Edward Raymond
Patent Examiner
Art Unit 2857